UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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MARY TARDIF,

Plaintiff,

-vs.-

CITY OF NEW YORK,

Defendants.

DEFENDANTS' MEMORANDUM OF FACT IN RESPONSE TO THE AFFIDAVITS OF PLAINTIFF'S EXPERTS

13 Civ. 4056 (KMW)

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PRELIMINARY STATEMENT

Defendants' motions to preclude the testimony of plaintiff's four purported expert witnesses (ECF No. 390) should be granted, because plaintiff has not established the reliability of their methodologies and conclusions.

POINT I

DIFFUSION TENSOR IMAGING IS NOT GENERALLY ACCEPTED FOR USE IN DIAGNOSING TRAUMATIC BRAIN INJURY IN INDIVIDUAL PATIENTS.

Plaintiff's experts fail to establish that the use of diffusion tensor imaging ("DTI") is a generally accepted methodology for diagnosing traumatic brain injury ("TBI"). Dr. Lawler states that "DTI is FDA approved, peer reviewed, is a widely available MRI method, and has been in clinical use for many years." (Lawler Aff., ECF 452-1, p. 2). These statements are not false, but do not directly answer the question posed by the Court. That is because DTI is not widely accepted nor used in clinical settings for diagnostic purposes in individual patients. Both Dr. Lawler and Dr. Krishna rely on a single review of group studies, published almost ten years ago, for the proposition that DTI is an accepted methodology in the assessment of TBI. *A Decade of*

DTI in Traumatic Brain Injury: 10 Years and 100 Articles Later, Hulkower, Pollak, Rosenbaum, Zimmerman, and Lipton, Nov. 2013, www.ajnr.org. (ECF No. 452-1). However, this article, co-authored by Dr. Michael Lipton, does not endorse the use of DTI to identify injuries in individual patients. Critically, nowhere does the article state that DTI is an accepted tool for diagnosing a traumatic brain injury. The section entitled, "Assessment of Individual Patients with TBI," describes ">35 additional articles [that] report the use of DTI in individual TBI cases," but cites to only one—another article by Dr. Lipton from 2008. In the section entitled, "Implications, Limitations, and Possibilities," the authors state, "Further application of individualized assessments of regional brain injury is thus needed to realize the full potential of DTI as a research and clinical tool." Id. Thus, the only source relied upon by plaintiff's experts does not even support the proposition for which it is ostensibly cited.

Additionally, neither Dr. Lawler nor Dr. Krishna acknowledge the breadth and depth of opposition to the use of DTI to evaluate TBI in individual patients. First, a substantial number of professional organizations in the neuroradiology field have expressly and unequivocally disclaimed the use of DTI for assessing individual patients. In fact, the Radiological Society of North America ("RSNA")—of which Dr. Lawler is a member—maintains a publicly available position statement which reads, in relevant part:

> Advanced neuroimaging techniques, including MRI diffusion tensor imaging, functional MRI, MR spectroscopy, perfusion imaging, PET/SPECT and magnetoencephalography, are of particular interest in identifying further injury in TBI patients when conventional non-contrast head CT and MRI are normal, as well as for prognostication in patients with persistent symptoms. *At present, there is insufficient evidence supporting the routine clinical use of these advanced neuroimaging techniques for diagnosis and/or prognostication at the individual patient level.* This is the focus of ongoing research. (Emphasis in original).

(Exhibit "A", "RSNA Statement on Traumatic Brain Injury (TBI) Imaging," updated Mar. 6, 2021, https://www.rsna.org/-/media/Files/RSNA/Media/TBI-Imaging.ashx, last accessed on May 12, 2022, ("RSNA Stmt.")).

The Departments of Defense and Veterans Affairs report the following in their "Clinical Practice Guideline for the Management and Rehabilitation of Post-Acute Mild Traumatic Brain Injury":

> The systematic evidence review of neuroimaging found four cross-sectional studies and one cohort study. Weak associations were seen between diffusion tensor imaging (DTI) and outcomes related to symptom severity and return to work. No correlation could be made between white matter hyperintensities seen on MRI utilizing T2 fluid-attenuated inversion recovery (FLAIR) sequences and neuropsychological testing or self-reported fatigue. The confidence in the quality of the evidence was very low with significant limitations such as small sample size with mixed-severity TBI. Neuroimaging research continues to make advances; however, there is inadequate evidence to recommend any particular neuroimaging modality or technique for routine clinical use that may aid in the diagnosis and/or direction of care for patients with symptoms attributed to mTBI.

(Ex. B, "VA/DOD Clinical Practice Guideline for the Management and Rehabilitation of Post-Acute Mild Traumatic Brain Injury," dated June 2021, https://www.healthquality.va.gov/guidelines/Rehab/mtbi/VADoDmTBICPGFinal508.pdf , last accessed May 12, 2022, ("VA-DOD Guideline"), pp. 27-28).

The American Society of Neuroradiology ("ASNR") maintains publicly available practice parameters which reference the use of DTI. (Ex. C, "ACR-ASNR-SPR Practice Parameter For The Performance And Interpretation of Magnetic Resonance Imaging (MRI) of the Brain," Resolution 2019-17, https://www.acr.org/-/media/ACR/Files/Practice-Parameters/MR-Brain.pdf, last accessed May 13, 2022, ("ASNR Parameters")). Those parameters note only that "advanced imaging techniques may provide added value for MRI of the brain," including DTI. (Id., p. 5). However, these practice parameters do not specifically address traumatic brain injury.

The admissibility of DTI in litigation with TBI involvement has been explored in other cases. Of note, DTI evidence was excluded in a case in which Dr. Lipton—the author of the sole paper upon which plaintiff's experts purport to rely—was put forward as the plaintiff's expert. Defendants are attaching hereto a series of affidavits authored by Dr. Apostoulous John Tsiouris in connection with that litigation. Brouard, et al. v. Convery, et al., Index No. 285601-2005, Sup. Ct., Suffolk County. (Ex. D, Tsiouris 2016 Affirmation; Ex. E, Tsiouris 2018

Affirmation; Ex. F, Tsiouris 2021 Affirmation; and Ex. G, Tsiouris 2021 Supplemental Affirmation). The Brouard Court declined—three times—to permit DTI evidence at trial, most recently in August 2021. (Ex. H, Brouard 2018 Order; Ex. I, Brouard 2019 Order; Ex. J, Brouard 2021 Order).

Defendants will not attempt to reiterate herein all of the salient points of Dr. Tsiouris's prior affidavits, or the Brouard Court's findings, but note the following which are of particular significance to the instant case:

1. DTI does not use a general standard, and variability between MRI machines, software, and subjects, means that comparisons of FA values are almost meaningless. In the context of this case, defendants note that Dr. Lawler reports—and Dr. Krishna reiterates—that plaintiff's MRI showed "a focus of decreased FA value on DTI maps." However, nowhere does Dr. Lawler explain what this means. That is, what is the "normal" from which plaintiff's FA values are deemed to have deviated.
2. The efficacy of DTI has only been seen in populations already known to suffer from traumatic brain injury, and not as a tool for prognostication.
3. There is no known accuracy for DTI in individual patients. Defendants respectfully refer the Cout to the referenced documents and submit that the plaintiff has failed to established that the use of DTI to diagnose injury in individual patients is generally accepted.

POINT II

PLAINTIFF'S EXPERTS HAVE NOT ESTABLISHED ANY CAUSAL CONNECTION BETWEEN THE WHITE MATTER HYPERINTENSITY AND ANY ALLEGED USE OF FORCE

At the outset, defendants note that only one of plaintiff's experts seems prepared offer a conclusion as to the causation of plaintiff's alleged traumatic brain injury. Dr. Lawler, in response to the Court's inquiries, has made clear that he is not espousing any opinion that the plaintiff suffered a head injury on March 21, 2012. (See, Lawler Aff., ECF No. 452-1, p. 3). Rather, Dr. Lawler seems prepared to say, now, only that Dr. Krishna's MRI referral in 2021 represented that the plaintiff sustained a trauma in 2012. (Id.) The only logical reading is that Dr. Lawler believes that plaintiff's MRI shows a "focus of axonal injury/axonal loss," but cannot offer an opinion as to what caused it.

Dr. Krishna, on the other hand, seems prepared to opine that this axonal injury—first diagnosed by Dr. Lawler in 2021—is evidence of a traumatic brain injury that was caused by plaintiff's fall on March 21, 2012. At bottom, this causation conclusion rests upon a single fallacy. Krishna accepts that the white matter hyperintensity was present on plaintiff's 2012 MRI, but not before. This is incorrect. As detailed in the attached affidavit from Dr. Tsiouris, the same white matter hyperintensity is visible in plaintiff's MRI studies from 2009, 2012, 2018, and 2021. (Affidavit of A. John Tsiouris, dated May 13, 2022. Thus, it could not have resulted from any injury sustained in 2012. Dr. Krishna does not identify any other method by which he drew a conclusion as to the timing of this alleged brain injury.

To the extent Dr. Krishna purports to rest his causation conclusions upon any other factors, he has likewise failed to establish that he followed any accepted methodology. Dr. Krishna

states that the incident as described to him by the plaintiff "can cause a traumatic brain injury because getting thrown backwards and hitting her head can cause the axonal injury[.]" (Krishna Aff., ECF No. 457-1, p. 4). To the extent this proposition rests upon the reliability of DTI as a tool for diagnosing TBI in individual patients, defendants respectfully refer the Court to Point I *supra*. Dr. Krishna further states that the plaintiff reported that she experienced a "loss of consciousness with nausea and vomiting, double vision, headaches[.]" (Id.) However, Dr. Krishna fails to identify any accepted diagnostic criteria against which he measured these reported symptoms—including the intensity or duration of such symptoms. This is despite the Court's specific request that he fully explain his "diagnosis that [plaintiff's] clinical findings are consistent with traumatic brain injury." (ECF No. 431, p. 3). Dr. Krishna also represents that plaintiff's post-2020 medical records—that is, her records of treatment after she sustained a concussion during a surfing accident—corroborate her TBI symptoms. However, again, he fails to identify any accepted diagnostic criteria he is following in doing so. Relatedly, although Dr. Krishna purports—in his supplemental expert report—to have ruled out this surfing incident as a cause of any actual recent symptoms, he never says how.

POINT III

PLAINTIFF'S EXPERTS HAVE NOT ESTABLISHED THE NEED FOR ANY REPORTED LONG-TERM LIFE CARE

Plaintiff's experts have failed to establish a need, generally, for long-term life care for plaintiff. Additionally, they have failed to establish that the specific opinions of Ms. Lajterman and Mr. Zaporowki represent reliable estimates of any necessary care.

On the first count, plaintiff's claims for future care expenses rest—at bottom—on the admissibility of her alleged TBI. As detailed above, her experts have failed to establish that

the admissibility of that alleged injury in this case. Even assuming that the TBI itself were not precluded, Dr. Krishna's opinions that plaintiff "has serious, permanent injuries that will significantly limit her working and social activities and that will require a home health aide" are completely unsupported. (Krishna Aff., ECF No. 457-1, p. 5). Dr. Krishna says that his conclusion is based on the length of time the plaintiff has suffered from a condition and past medical interventions—but does not say what the condition is, what the length of time is, or what the past interventions are. Indeed, nowhere does Dr. Krishna even attempt explain whether any of plaintiff's claimed symptoms could be related to her unrelated, documented seizure disorder and how that disorder factors in to her need for future care. Nowhere does Dr. Krishna document that plaintiff's activities of daily living have been impaired in any way. Unsurprisingly, Dr. Krishna also offers no description of the methodology he followed in determining that plaintiff's "condition" is unlikely to improve, and will, in fact, require home health care.

Ms. Lajterman similarly fails to establish that her opinions followed generally accepted methodology. Ms. Lajterman directs the Court to professional standards of practice, which are attached to her affidavit, but fails to address her deviations from those standards. In the first instance, those standards state that a "life care plan is a document that provides accurate and timely information which can be followed by the evaluee and relevant parties." (Lajterman Aff., ECF No. 448-1). The document prepared by Ms. Lajterman, however, reads as cost estimate rather than a plan. Nothing in Ms. Lajterman's "plan" purports to set forth guidance for the plaintiff as to how to manage her "condition," but merely cobbles together a list of potential future expenditures. Mostly glaringly, Ms. Lajterman acknowledges in her affidavit that these standards of practice require a life care planner to obtain information from relevant treating or consulting health care professionals. (ECF No. 448-1). Ms. Lajterman concedes that she attempted to

communicate with plaintiff's treating specialists, none of whom cooperated in the preparation of this plan. (Lajterman Aff., ECF No. 448-1, p. 2). First, this representation is in direct contradiction to Ms. Lajterman's prior report, which states that her life care plan was based, in part, on "[c]orrespondence with Ms. Tardif's treating physicians." (Lajterman Rpt., ECF No. 412-4, p. 1). Second, Ms. Lajterman never explains how she was able to reach reliable conclusions without following the generally accepted methodology she claims to have relied upon.

Lastly, Mr. Zaporowski's affidavit also fails to establish that he followed any generally accepted methodology in reaching his conclusions as to plaintiff's future care costs. Specifically, the Court directed Mr. Zaporowski to describe the reliability methodology by which he used BLS data to inflate plaintiff's future medical and physician costs as prepared by Ms. Lajterman. (ECF No. 431, p. 5). Mr. Zaporowski's affidavit does not address this topic at all, but simply reiterates the values used and calculations performed, without any discussion of the reliability of his methods.

For all of the foregoing reasons, defendants respectfully submit that plaintiff has failed to establish the reliability of the methodologies and conclusions of her experts and their testimony should be precluded.

CONCLUSION

For the foregoing reasons, defendants respectfully request that the Court grant defendants' motions to preclude the testimony of plaintiff's experts in its entirety, together with such other and further relief as the Court deems just.

Dated: New York, New York
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